PCT

RAW SEQUENCE LISTING   DATE: 07/08/2004
PATENT APPLICATION: US/10/500,586   TIME: 16:27:07

Input Set : **A:\280277 Sequence Listings.txt**
Output Set: **N:\CRF4\07082004\J500586.raw**

```
   1 <110> APPLICANT: KIM, Bum-Joon
   2       BIOMEDLAB CORPORATION
   4 <120> TITLE OF INVENTION: PRIMERS FOR AMPLIFYING HSP 65 GENE OF MYCOBACTERIAL SPECIES,
HSP
   5       65 GENE FRAGMENTS AND METHOD OF IDENTIFYING MYCOBACTERIAL SPECIES
   6       WITH THE SAME
   8 <130> FILE REFERENCE: OPP021096KR
C--> 10 <140> CURRENT APPLICATION NUMBER: US/10/500,586
C--> 10 <141> CURRENT FILING DATE: 2004-06-30
  10 <150> PRIOR APPLICATION NUMBER: KR 10-2002-0004297
  11 <151> PRIOR FILING DATE: 2002-01-24
  13 <150> PRIOR APPLICATION NUMBER: KR 10-2002-0011648
  14 <151> PRIOR FILING DATE: 2002-03-05
  16 <160> NUMBER OF SEQ ID NOS: 56
  18 <170> SOFTWARE: KopatentIn 1.71
  20 <210> SEQ ID NO: 1
  21 <211> LENGTH: 604
  22 <212> TYPE: DNA
  23 <213> ORGANISM: Mycobacterium abscessus
  25 <400> SEQUENCE: 1
  26 ggaggacccg tacgagaaga tcggcgctga gctggtcaag gaagttgcca agaagaccga        60
  28 cgacgtcgcg ggtgacggca ccaccaccgc caccgtgctc gcccaggctc tggtcaagga       120
  30 aggtctgcgt aacgtcgccg ccggcgccaa cccgctcggc ctgaagcgcg gtatcgagaa       180
  32 ggccgtcgag aaggtcaccg agacgctgct gaagagcgcc aaggaggtcg agaccaagga       240
  34 gcagatcgcg gccacggccg gtatctccgc gggcgaccag tccatcggcg acctgatcgc       300
  36 cgaggccatg gacaaggttg gtaacgaggg tgtcatcacc gtcgaggagt ccaacacctt       360
  38 cggcctgcag ctggagctca ccgagggtat gcgcttcgac aagggctaca tctcgggcta       420
  40 cttcgtgacc gacgccgagc gtcaggaagc cgtcctggag gatccctaca tcctgctggt       480
  42 cagctccaag gtgtcgaccg tcaaggatct gcttccgttg ctggagaagg tcattcaggc       540
  44 cggcaagccg ctgctgatca tcgccgagga cgtcgagggc gaggctctct ccactctggt       600
  46 cgtc                                                                    604
  49 <210> SEQ ID NO: 2
  50 <211> LENGTH: 604
  51 <212> TYPE: DNA
  52 <213> ORGANISM: Mycobacterium africanum
  54 <400> SEQUENCE: 2
  55 ggaggatccg tacgagaaga tcggcgccga gctggtcaaa gaggtagcca agaagaccga        60
  57 tgacgtcgcc ggtgacggca ccacgacggc caccgtgctg gcccaggcgt tggttcgcga       120
  59 gggcctgcgc aacgtcgcgg ccggcgccaa cccgctcggt ctcaaacgcg gcatcgaaaa       180
  61 ggccgtggag aaggtcaccg agaccctgct caagggcgcc aaggaggtcg agaccaagga       240
  63 gcagattgcg gccaccgcag cgatttcggc gggtgaccag tccatcggtg acctgatcgc       300
  65 cgaggcgatg gacaaggtgg gcaacgaggg cgtcatcacc gtcgaggagt ccaacacctt       360
  67 tgggctgcag ctcgagctca ccgagggtat gcggttcgac aagggctaca tctcggggta       420
  69 cttcgtgacc gacccggagc gtcaggaggc ggtcctggag gacccctaca tcctgctggt       480
```

RAW SEQUENCE LISTING   DATE: 07/08/2004
PATENT APPLICATION: US/10/500,586   TIME: 16:27:07

Input Set : A:\280277 Sequence Listings.txt
Output Set: N:\CRF4\07082004\J500586.raw

```
 71 cagctccaag gtgtccactg tcaaggatct gctgccgctg ctcgagaagg tcatcggagc         540
 73 cggtaagccg ctgctgatca tcgccgagga cgtcgagggc gaggcgctgt ccaccctggt         600
 75 cgtc                                                                      604
 78 <210> SEQ ID NO: 3
 79 <211> LENGTH: 604
 80 <212> TYPE: DNA
 81 <213> ORGANISM: Mycobacterium asiaticum

 83 <400> SEQUENCE: 3
 84 ggaggacccg tacgagaaga tcggcgccga gctggtcaag gaagtcgcca agaagaccga          60
 86 cgacgtggcc ggtgacggca ccacgacggc caccgtgctg gcacaggcgc tggtcaagga         120
 88 gggcctgcgc aacgttgccg caggcgccaa cccgctgggc ctgaagcgcg gcatcgagaa         180
 90 ggccgtcgag aaggtcaccc agaccctgct cagctcggcc aaggacgtcg agaccaagga         240
 92 gcagatcgcg gccaccgcgg gtatttccgc gggcgaccag tcgatcggcg acctgatcgc         300
 94 cgaggcgatg gacaaagtcg gcaacgaggg tgtcatcacc gtcgaggagt ccaacacctt         360
 96 cggcctgcag ctcgagctca ccgagggcat gcggttcgac aagggttaca tctcgggcta         420
 98 cttcgtcacc gacgccgagc gtcaggaagc cgtcctggag gacccctaca tcctgctggt         480
100 ttccagcaag gtgtcgaccg tcaaggacct gctgccgctg ctggagaagg tcatccaggc         540
102 cggcaagccg ctgctgatca tcgccgagga cgtcgagggc gaggcgctgt ccaccctggt         600
104 cgtc                                                                      604
107 <210> SEQ ID NO: 4
108 <211> LENGTH: 604
109 <212> TYPE: DNA
110 <213> ORGANISM: Mycobacterium aichiense

112 <400> SEQUENCE: 4
113 cgaggacccg tacgagaaga tcggcgctga gctggtcaag gaagtcgcca agaagactga          60
115 cgatgtcgcg ggcgacggca ccaccaccgc caccgtgctc gctcaggctc tggttcgcga         120
117 aggtctgcgc aacgtcgctg ccggcgccaa cccgctcggc ctgaagcgcg gcatcgagaa         180
119 ggccgtcgag aagatcaccg agacgctcct caagagcgcc aaggaggtcg agaccaagga         240
121 ccagatcgcg gccaccgccg ggatctccgc gggcgaccag accatcggtg acctgatcgc         300
123 cgaggccatg gacaaggtcg gcaacgaggg tgtcatcacc gtcgaggagt cgaacacctt    ﹨    360
125 cggcctgcag ctcgagctca ccgagggtat gcgcttcgac aagggctaca tctcgggtta         420
127 cttcgtgacc gacgccgagc gtcaggaagc ggtcctcgag gatccgtaca tcctgctggt         480
129 gtcgtcgaag gtctcgaccg tcaaggacct gcttcccttg ctggagaagg tcattcagtc         540
131 gggcaagccg ctgctgatca tcgccgagga cgtcgagggc gaagccctgt ccaccctggt         600
133 ggtc                                                                      604
136 <210> SEQ ID NO: 5
137 <211> LENGTH: 604
138 <212> TYPE: DNA
139 <213> ORGANISM: Mycobacterium avium

141 <400> SEQUENCE: 5
142 ggaggacccg tacgagaaga tcggcgccga gctggtcaag gaagtcgcca agaagaccga          60
144 cgacgtcgcc ggtgacggca cgacgacggc cacggtgctc gcccaggcgt tggtccgcga         120
146 gggcctgcgc aacgtcgcgg ccggcgccaa cccgctgggt ctcaagcgcg gcatcgagaa         180
148 ggccgtcgag aaggtcaccg agaccctgct caagtcggcc aaggaggtcg agaccaagga         240
150 ccagatcgct gccaccgcgg ccatctccgc gggcgaccag tcgatcggcg acctgatcgc         300
152 cgaggcgatg gacaaggtcg gcaacgaggg cgtcatcacc gtcgaggagt ccaacacctt         360
154 cggcctgcag ctcgagctca ccgagggtat gcggttcgac aagggttaca tctcgggcta         420
156 cttcgtcacc gacgccgagc gtcaggaagc cgtcctcgag gatccgttca tcctgctggt         480
158 cagctccaag gtctcgaccg tcaaggacct gctgccgctg ctggagaagg tcatccaggc         540
```

```
160 cggcaagccg ctgctgatca tcgccgagga cgtcgagggc gaggccctgt ccaccctggt          600
162 cgtc                                                                        604
165 <210> SEQ ID NO: 6
166 <211> LENGTH: 604
167 <212> TYPE: DNA
168 <213> ORGANISM: Mycobacterium bovis
170 <400> SEQUENCE: 6
171 ggaggatccg tacgagaaga tcggcgccga gctggtcaaa gaggtagcca agaagaccga           60
173 tgacgtcgcc ggtgacggca ccacgacggc caccgtgctg gcccaggcgt tggttcgcga          120
175 gggcctgcgc aacgtcgcgg ccggcgccaa cccgctcggt ctcaaacgcg gcatcgaaaa          180
177 ggccgtggag aaggtcaccg agaccctgct caagggcgcc aaggaggtcg agaccaagga          240
179 gcagattgcg gccaccgcag cgatttcggc gggtgaccag tccatcggtg acctgatcgc          300
181 cgaggcgatg gacaaggtgg caacgaggg cgtcatcacc gtcgaggagt ccaacacctt           360
183 tgggctgcag ctcgagctca ccgagggtat gcggttcgac aagggctaca tctcggggta          420
185 cttcgtgacc gacccggagc gtcaggaggc ggtcctggag gacccctaca tcctgctggt          480
187 cagctccaag gtgtccactg tcaaggatct gctgccgctg ctcgagaagg tcatcggagc          540
189 cggtaagccg ctgctgatca tcgccgagga cgtcgagggc gaggcgctgt ccaccctggt          600
191 cgtc                                                                        604
194 <210> SEQ ID NO: 7
195 <211> LENGTH: 604
196 <212> TYPE: DNA
197 <213> ORGANISM: Mycobaterium bovis BCG
199 <400> SEQUENCE: 7
200 ggaggatccg tacgagaaga tcggcgccga gctggtcaaa gaggtagcca agaagaccga           60
202 tgacgtcgcc ggtgacggca ccacgacggc caccgtgctg gcccaggcgt tggttcgcga          120
204 gggcctgcgc aacgtcgcgg ccggcgccaa cccgctcggt ctcaaacgcg gcatcgaaaa          180
206 ggccgtggag aaggtcaccg agaccctgct caagggcgcc aaggaggtcg agaccaagga          240
208 gcagattgcg gccaccgcag cgatttcggc gggtgaccag tccatcggtg acctgatcgc          300
210 cgaggcgatg gacaaggtgg caacgaggg cgtcatcacc gtcgaggagt ccaacacctt           360
212 tgggctgcag ctcgagctca ccgagggtat gcggttcgac aagggctaca tctcggggta          420
214 cttcgtgacc gacccggagc gtcaggaggc ggtcctggag gacccctaca tcctgctggt          480
216 cagctccaag gtgtccactg tcaaggatct gctgccgctg ctcgagaagg tcatcggagc          540
218 cggtaagccg ctgctgatca tcgccgagga cgtcgagggc gaggcgctgt ccaccctggt          600
220 cgtc                                                                        604
223 <210> SEQ ID NO: 8
224 <211> LENGTH: 604
225 <212> TYPE: DNA
226 <213> ORGANISM: Mycobacterim celatum Type 1
228 <400> SEQUENCE: 8
229 ggaggacccc tacgaaaaga tcggcgccga gctggtcaag gaagtcgcca agaagaccga           60
231 cgacgtcgcg ggtgacggta cgacgacggc cacggtgctg gcccaggcgc tggtcaagga          120
233 gggcctgcgc aacgtcgccg ccggcgccaa cccgctcggc ctgaagcgcg gcatcgagaa          180
235 ggccgtcgag aaggtcaccg agacgctgct caagggcgcc aaggaggtcg agaccaagga          240
237 gcagattgct gccaccgcgg ccatctccgc cggcgaccag tcgatcggcg acctgatcgc          300
239 cgaggccatg gacaaggtcg gcaacgaggg cgtcatcacc gtcgaggagt ccaacacctt          360
241 cggcctgcag ctcgagctca ccgagggtat gcgcttcgac aagggctaca tctcgggtta          420
243 cttcgtcacc gacgccgagc gtcaggaggc ggtgctcgag agccgtaca tcctgctggt          480
245 cagctccaag gtgtcgacgg tcaaggacct gcttccgctg ctggagaagg tcatccaggc          540
247 cggcaagccg ctgctgatca tcgccgagga cgtcgagggc gaagccctct ccaccctggt          600
```

RAW SEQUENCE LISTING   DATE: 07/08/2004
PATENT APPLICATION: US/10/500,586   TIME: 16:27:07

Input Set : A:\280277 Sequence Listings.txt
Output Set: N:\CRF4\07082004\J500586.raw

```
249 cgtc                                                              604
252 <210> SEQ ID NO: 9
253 <211> LENGTH: 604
254 <212> TYPE: DNA
255 <213> ORGANISM: Mycobaterium celatum TypeII
257 <400> SEQUENCE: 9
258 ggaggacccc tacgagaaga tcggcgccga gctggtcaag gaagtcgcca agaagaccga      60
260 cgacgtcgcg ggtgacggta cgacgacggc caccgtgctg gcccaggcgc tggtcaagga     120
262 aggcctgcgc aacgtcgccg ccggtgccaa cccgctcggc ctgaagcgcg gtatcgagaa     180
264 ggccgtcgag aaggtcaccg agacgctgct caagggcgcc aaggaggtcg agaccaagga     240
266 gcagatcgct gccaccgcgg ccatctccgc cggtgaccag tcgatcggcg acctgatcgc     300
268 cgaggcgatg gacaaggtcg gcaacgaggg cgtcatcacc gtcgaggagt ccaacacctt     360
270 cggcctgcag ctcgagctca ccgagggtat gcgcttcgac aagggctaca tctcgggtta     420
272 cttcgtcacc gacgccgagc gtcaggaggc ggtgctcgag gagccctaca tcctgctggt     480
274 cagctccaag gtgtcgacgg tcaaggatct gctgccgctg ctggagaagg tcatccaggc     540
276 cggcaagccg ctgctgatca tcgccgagga cgtcgagggt gaggcgttga gcaccctggt     600
278 cgtc                                                              604
281 <210> SEQ ID NO: 10
282 <211> LENGTH: 604
283 <212> TYPE: DNA
284 <213> ORGANISM: Mycobacterium chelonae
286 <400> SEQUENCE: 10
287 ggaggacccg tacgagaaga tcggcgctga gctggtcaag gaagttgcca agaagactga      60
289 cgacgtcgcg ggtgacggca ctactaccgc caccgtgctt gcccaggctc tggtcaagga     120
291 aggtctgcgt aacgtcgctg ccggcgccaa cccgctcggc ctgaagcgcg gcatcgagaa     180
293 ggccgtggag gccgtcacca gctctctgct ggactccgcc aaggagatcg acaccaagga     240
295 gcagatcgcg gccaccgcgg gcatctccgc gggtgaccag tccatcggtg atctgatcgc     300
297 cgaggccatg gacaaggtcg gcaacgaggg tgtcatcacc gtcgaggagt ccaacacctt     360
299 cggcctgcag ctggagctca ccgagggcat gcgcttcgac aagggctaca tctcgggtta     420
301 cttcgtgacc gacgccgagc gtcaggaagc cgtcctggag gatccctaca tcctgctggt     480
303 cagctccaag gtctcgaccg tcaaggacct acttcccttg ctggagaagg tcatccaggg     540
305 cggcaagccg ctgctgatca tcgccgagga cgttgagggc gaggctctct cgaccctggt     600
307 cgtc                                                              604
310 <210> SEQ ID NO: 11
311 <211> LENGTH: 604
312 <212> TYPE: DNA
313 <213> ORGANISM: Mycobacterium chitae
315 <400> SEQUENCE: 11
316 ggaggacccg tacgagaaga tcggcgccga gctggtcaag gaagtcgcca agaagactga      60
318 cgacgtcgcc ggcgacggca ccaccaccgc caccgttctg gcccaggcgc tggttcgcga     120
320 aggtctgcgc aacgtcgcgg ccggcgccaa cccgctcggc ctgaagcgcg gcatcgagaa     180
322 ggccgtcgag accgtctcgg agaacctgct caagtcggcc aaggaggtcg agaccaagga     240
324 gcagatcgcc gccaccgccg ggatctccgc gggcgacacc accatcggtg acctgatcgc     300
326 cgaggccatg gacaaggtgg gcaacgaggg tgtcatcacc gtcgaggagt ccaacacctt     360
328 cggcctgcag ctggagctca ccgagggcat gcgcttcgac aagggctaca tctcgggcta     420
330 cttcgtgacc gacgccgagc gtcaggaagc cgtcctggag gatccctaca tcctgctggt     480
332 cagctcgaag atctcgaccg tcaaggacct gctgccgctg ctggagaagg tcatccagtc     540
334 cggcaagccg ctgctgatca tcgccgagga cgtcgagggc gaggccctgt cgaccctggt     600
336 ggtc                                                              604
```

RAW SEQUENCE LISTING   DATE: 07/08/2004
PATENT APPLICATION: US/10/500,586   TIME: 16:27:07

Input Set : A:\280277 Sequence Listings.txt
Output Set: N:\CRF4\07082004\J500586.raw

```
339 <210> SEQ ID NO: 12
340 <211> LENGTH: 604
341 <212> TYPE: DNA
342 <213> ORGANISM: Mycobacterium microti

344 <400> SEQUENCE: 12
345 ggaggatccg tacgagaaga tcggcgccga gctggtcaaa gaggtagcca agaagaccga      60
347 tgacgtcgcc ggtgacggca ccacgacggc caccgtgctg gcccaggcgt tggttcgcga     120
349 gggcctgcgc aacgtcgcgg ccggcgccaa cccgctcggt ctcaaacgcg gcatcgaaaa     180
351 ggccgtggag aaggtcaccg agaccctgct caagggcgcc aaggaggtcg agaccaagga     240
353 gcagattgcg gccaccgcag cgatttcggc gggtgaccag tccatcggtg acctgatcgc     300
355 cgaggcgatg gacaaggtgg gcaacgaggg cgtcatcacc gtcgaggagt ccaacacctt     360
357 tgggctgcag ctcgagctca ccgagggtat gcggttcgac aagggctaca tctcggggta     420
359 cttcgtgacc gacccggagc gtcaggaggc ggtcctggag gacccctaca tcctgctggt     480
361 cagctccaag gtgtccactg tcaaggatct gctgccgctg ctcgagaagg tcatcggagc     540
363 cggtaagccg ctgctgatca tcgccgagga cgtcgagggc gaggcgctgt ccaccctggt     600
365 cgtc                                                                  604
368 <210> SEQ ID NO: 13
369 <211> LENGTH: 604
370 <212> TYPE: DNA
371 <213> ORGANISM: Mycobaterium flavescens

373 <400> SEQUENCE: 13
374 ggaggacccg tacgagaaga tcggcgctga gctggtcaag gaagtcgcca agaagaccga      60
376 cgacgtcgcg ggcgacggca ccaccaccgc caccgtgctg gcccaggcgc tcgtgcgcga     120
378 gggtctgcgc aacgtcgcgg ccggcgccaa cccgatggcg ctgaagcgcg gtatcgagaa     180
380 ggccgtcgag aaggtcaccg agacgctgct gaagtcggcc aaggaggtcg agaccaagga     240
382 gcagatcgct gccaccgccg cgatctcggc gggcgacacc cagatcggca agctgatcgc     300
384 cgaggccatg gacaaggtcg gcaacgaggg tgtcatcacc gttgaggagt ccaacacctt     360
386 cgggctgcag ctcgagctca ccgagggtat gcgcttcgac aagggctaca tctcgggtta     420
388 cttcgtgacc gacgccgagc gtcaggaagc ggtcctcgag gatccctgca tcctgctcgt     480
390 gtcgtccaag gtgtcgaccg tcaaggatct gctcccgttg ctggagaagg tcattcaggc     540
392 cggcaagccg gtgctgatca tcgccgagga cgtcgagggt gaggccctgt cgaccctggt     600
394 ggtc                                                                  604
397 <210> SEQ ID NO: 14
398 <211> LENGTH: 604
399 <212> TYPE: DNA
400 <213> ORGANISM: Mycobaterium fortuitum 6841

402 <400> SEQUENCE: 14
403 ggaggacccg tacgagaaga tcggcgctga gctcgtcaaa gaggtcgcca agaagaccga      60
405 cgacgtcgcg ggcgacggca ccaccaccgc caccgttctg gcacaggccc tggttcgtga     120
407 aggtctgcgc aacgtcgctg ccggcgccaa cccgctcggc ctgaagcgcg gcatcgagaa     180
409 ggccgtcgag aaggtcaccg agacgctgct gaagagcgcc aaggaggtgg agaccaagga     240
411 gcagatcgct gccaccgccg gtatctccgc cggtgaccag tccatcggtg acctgatcgc     300
413 cgaggccatg gacaaggtcg gcaacgaggg tgtcatcacc gtcgaggaga gcaacacctt     360
415 cggcctgcag ctggagctca ccgggggtat gcgcttcgac aagggctaca tctcgggcta     420
417 cttcgtgacc gacgccgagc gtcaggaagc cgtcctggag gatccctaca tcctgctggt     480
419 cagctccaag gtctcgaccg tcaaggacct gctgccgctg ctggagaagg tcatccagtc     540
421 cggcaagccg ctgctgatca tcgccgagga cgtcgagggc gaagccctgt cgaccctggc     600
423 ggtc                                                                  604
426 <210> SEQ ID NO: 15
```

VERIFICATION SUMMARY DATE: 07/08/2004
PATENT APPLICATION: **US/10/500,586** TIME: 16:27:08

Input Set : **A:\280277 Sequence Listings.txt**
Output Set: **N:\CRF4\07082004\J500586.raw**

L:10 M:270 C: Current Application Number differs, Replaced Current Application No
L:10 M:271 C: Current Filing Date differs, Replaced Current Filing Date